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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09 902,883	07 11 2001	Meichun Ruan	12218.1100	9836

7590 12 18 2002

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EXAMINER

SONG, SARAH U

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 12 18 2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/902,883

Applicant(s)

RUAN ET AL

Examiner

Sarah Song

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5 6) ☐ Other:

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
It does not identify the citizenship of each inventor.

Information Disclosure Statement

2. The prior art documents submitted by the applicant in the Information Disclosure Statement filed on October 11, 2001 and April 22, 2002 have all been considered and made of record (note the attached copy of form PTO-1449).

Drawings

3. This application has been filed with eighteen (18) sheets of drawings, which have been approved by the Examiner.

Claim Objections

4. Claims 9 and 11 are objected to because of the following informalities: "said reflective material" should be changed to -said reflective wall—to provide proper antecedent basis (note claims 8 and 10). Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for

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patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 8 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Rensing et al. (U.S. Patent Application Publication 2002/0164113). Rensing et al. disclose a device for transmitting optical signals, said device comprising an optical input 632 accepting said optical signals; a control device (reflective mirror elements 640,641) directing said optical signals between said at least one optical input and an optical output 646; and a channel (constituted by reflective wall/mirror 644 and substrate 636) located between said optical input and said optical output confining said optical signals to a predetermined path. See Figure 55.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rensing et al. Rensing et al. disclose a coating to enhance the mirrors reflectivity [0093], but does not specifically disclose one of the group consisting of aluminum, gold, silver, and chromium. Such coatings were well known in the art at the time of the invention and would have been obvious to one having ordinary skill in the art to enhance the reflectivity of the plate 644.

9. Claims 3-7, 10, 11, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rensing et al. as applied to claim 2 above, and further in view of Judy et al. (U.S. Patent 5,945,898). Rensing et al. discloses a mirror element comprising a cantilever [0108], but does

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not specifically disclose a cantilever having a magnetically sensitive portion and a reflective portion, wherein electromagnetic signals are configured to induce a torque in the cantilever. Judy et al. discloses a plurality of mirror elements or reflectors (102), i.e. magnetic plate with a mirror coating (column 5, lines 15-16), each comprising a cantilever having a magnetically sensitive portion and a reflective portion, wherein each of said cantilevers is configured to be switched between a first state and a second state by one of a plurality of electromagnetic signals (i.e. magnetic field 118) consisting of magnetic signals generated by conductors 302 or electrostatic signals generated by electrodes 112 and 114. It is noted that the magnetic field 118 induces a torque in the cantilever. Therefore, one of ordinary skill in the art would have found it obvious to incorporate the magnetic actuation of Judy et al. into the switch of Rensing et al. One of ordinary skill in the art would have been motivated to make such a modification to combine the features of electrostatic forces and magnetic forces within the same microstructure. Regarding claims 14-20, the method of switching would have been obvious for reasons similar to those stated above with respect to the device claims.

Conclusion

10. Any inquiry concerning the merits of this communication should be directed to Examiner Sarah Song at telephone number 703-306-5799. Any inquiry of a general or clerical nature, or relating to the status of this application or proceeding should be directed to the receptionist at telephone number 703-308-0956 or to the technical support staff supervisor at telephone number 703-308-3072.

Sarah Song
sus

December 15, 2002